

Understanding the knowledge environment

LTC (R)Michael Prevou

Knowledge and other intangibles such as leadership and experience are valuable commodities to the Army and a driving force behind the emerging human capital strategy initiatives.

In a 1994 Fortune Magazine article, Tom Stewart warned companies to focus less on what they own and more on what they know: their intellectual capital. Since then, Peter Drucker, among others, has identified knowledge as the new basis of competition in post-capitalist society, and Stanford economist Paul Romer has called knowledge the only unlimited resource. In the mid-90s, the term 'knowledge management' was used to address the shortcomings of information technology to deliver on the promise of improved effectiveness and increased efficiency.

Army leaders have embraced the need for KM over the last 8-10 years even as they struggled to define it. Currently, knowledge management often seems technical and software-oriented. One of the main reasons KM initiatives fail is because of how the term 'knowledge management' is used and the misunderstanding

this creates in the minds of stakeholders.

Confronting the threats of a network-centric enemy with a slow, traditional hierarchical structure, weighed down by cumbersome processes and out of date structures is no longer sufficient to win the learning competition. We need new approaches that will prepare the unit on the ground for the next patrol rather than the next war.

The "how" and "why" elements of tacit knowledge have become critical for mission command. In a complex and rapidly changing environment, managing and applying knowledge gives us a competitive edge, allowing our decision cycle to turn faster than that of an adversary. This application of tacit knowledge (the knowledge in our heads) has replaced the who, what, when, and where questions that provided us only information. As a result, the Army has embraced the discipline to increase the speed with which we acquire, retain, create, share, learn, and manage what we know and to increase the flow of that knowledge throughout the organization.

Recently, the meaning of the term 'knowledge management' has been debated and redefined repeatedly. It has even been argued that knowledge management is a poor term because knowledge cannot be managed, since it lives primarily in people's minds. Information management isn't much of an improvement because it carries with it almost two decades of baggage and preconceptions that focus on technology. Some say knowledge is an infinite resource, and almost all practitioners agree that unused knowledge has no value.

In fact, knowledge appears to increase in value the more it is shared, and effective organizations enable this knowledge flow through the specific elements of a knowledge environment they control.

Effective KM requires a broader understanding of the elements in this environment and the interactions that we can manage to make knowledge flow more effectively.

Like an ecosystem, the knowledge environment must maintain a certain balance of these elements or it will cease to function correctly. The knowledge assessment team has visited more than a dozen units in the last two years and has witnessed firsthand the ecosystem out of balance.

Before we delve too deeply into the knowledge environment and knowledge flow, let's establish a few working definitions. In an attempt to explain knowledge, there is sometimes a misconception that knowledge is information.

Information is data that has been given meaning by context. A spreadsheet is often used to make information from data. Another example is the SPOT report containing 6-9 lines of data put into context to create a common picture.

Knowledge can have many definitions or explanations. An absolute definition is hard to formulate because knowledge "is the subjective interpretation of information in the mind of the perceiver," according to experts expounding in Makhfi Introduction To Knowledge Modeling, http://www.makhfi.com/KCM_intro.htm. It is information combined with understanding and capability.

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KM enables:

- Situational understanding
- A shared common operational picture
- Decision-making
- Transfer and availability of expertise and experience
- Organizational learning during operations
- Collaboration
- Speeding knowledge transfer between units and individuals
- Reach-back capability to Army schools, centers of excellence, and other resources
- Process improvements
- Helping leaders and Soldiers become more agile and adaptive during operations
- Doctrine development

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE 2011		2. REPORT TYPE		3. DATES COVERED 00-00-2011 to 00-00-2011	
4. TITLE AND SUBTITLE Understanding the knowledge environment				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U.S. Army Signal Center,ATTN: ATZH-POM (Army Communicator),Bldg 29808A (Signal Towers), Room 713,Fort Gordon,GA,30905				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 5	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

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In their tome, *Working Knowledge: How Organizations Manage What They Know*, Harvard Business School Press, Boston 1998, T.H. Davenport and L. Prusak write, "It is originated and applied in the minds of the knower or informed person." Knowledge is "information combined with experience, context, interpretation, and reflection. It is a high-value form of information that is ready to apply to decisions and actions."

Typically, knowledge provides a level of predictability that stems from recognizing patterns. For example, information from two or three different SPOT reports has significant meaning to a unit operating in the area for a while, whereas it would be unrelated pieces of information to someone new.

"Knowledge is the essential factor in adding meaning to information," write A. Abell and N. Oxbrow, in *Competing With Knowledge*. London: Facet Publishing. 2001.

Tacit Knowledge refers to personal knowledge rooted in the individual experience and involves intangible factors, such as personal belief, perspectives, and values. Tacit knowledge can be very difficult to transfer. Examples include judgment, know-how, or intuition.

Explicit knowledge refers to tacit knowledge that has been documented – articulated into formal language – and can be much more easily transferred among individuals. Explicit knowledge is found in documents and databases, such as manuals, reports, and procedures. Making tacit knowledge explicit is one of the key functions of KM strategies.

Knowledge flow is the movement of knowledge through an organization. Like a river, the flow finds its own way but can be

disrupted or stopped by barriers. We can steer the direction of flow and can manage the elements that impact that flow through the environment. According to Frank Leistner, writing in *Mastering Organizational Knowledge Flow*, Wiley and SAS business Series, Hoboken N.J. 2010, pages 17-18, effective flow comes from two sources: the active side with directed actions, and the passive side where you remove the barriers that prevent knowledge sharing from happening.

Knowledge management, simply stated, is the art and science of connecting people who need the right knowledge, at the right time, to those who have it. The nature and role of KM as mandated in FM 3-0 is, "To respond to a rapidly changing operational environment and develop creativity, innovation, and adaptation, information must become knowledge. That knowledge must permeate throughout the Army. This requires both art and science. Knowledge management is the art of gaining and applying information throughout the Army and across the joint force.

It generates knowledge products and services by and among commanders and staffs. It supports collaboration and the conduct of operations while improving organizational performance."

According to FM 6-01.1, the primary purpose of KM is to help commanders and their staffs make informed, timely decisions. KM enables effective collaboration by ensuring efficient and timely flow of knowledge throughout the commanders' organizations. It also narrows the gap between relevant information commanders require and that which they have. Managing the Knowledge Environment

If KM is a deliberate approach to help organizations plan, create, organize, integrate, maintain, transfer, assess, and effectively use and reuse what they know (both tacit and explicit) to achieve a sustained competitive advantage, then where do we start? To be effective we must manage the components of the full-spectrum knowledge environment...not just the knowledge artifacts.

KM systems (the technology) get the right information to the right people at the right time,

COMPONENTS OF A KNOWLEDGE ENVIRONMENT

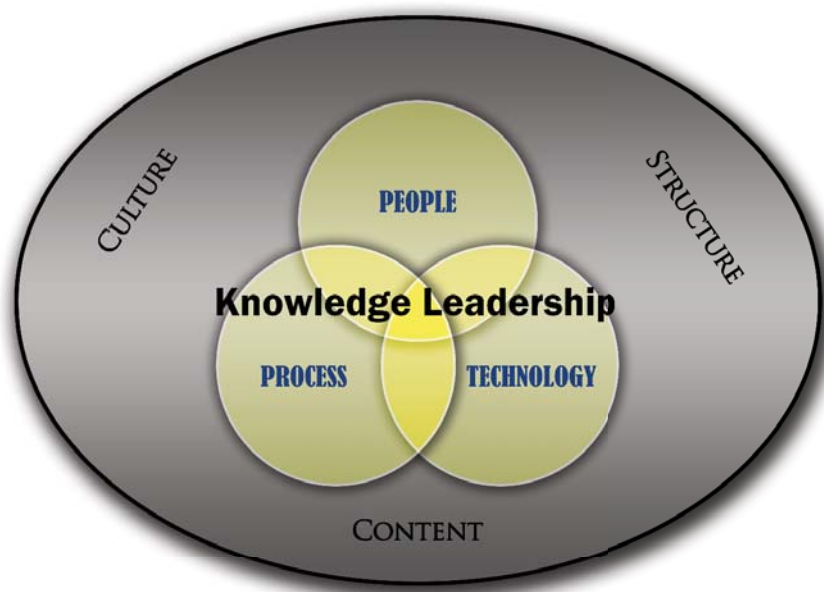


Figure 1

provide them with the tools for analyzing that information, and give them the power to respond to the insights they glean from that knowledge. But effective KM requires high human-to-human interaction and helps eliminate barriers by networking the hierarchy of an organization and by helping knowledge flow from its source through the organization. KM is a discipline that treats intellectual capital, both tacit and explicit, as a managed asset; whereas, information management systems manage just the explicit documentation. The KM discipline is more holistic. Knowledge managers strive to manage the knowledge environment, not simply the assets. The knowledge environment consists of seven major components: structure, people, processes, technology, content, organizational culture, and knowledge leadership.

As shown in Figure 1, the people, processes, and technology intersect, forming linked variables that must be in balance. Culture, content, and structure are independent variables that affect each of the linked variables. Knowledge leadership is overlaid across all the components and provides the vision, drive, and resources to make KM effective.

Components of a Knowledge Environment

This integrated knowledge environment is an ecosystem that requires a balance of three types of interactions: human-to-human, human-to-system, and system-to-system. These interactions are critical to an organization's ability to function properly, and the organization's structures, people, processes, technologies, and culture make it possible for the 'flow' of data to become information and then to knowledge. KM optimizes knowledge flow by enabling the interactions that produce that flow and managing the components in the environment. Knowledge is social and only moves through people. Information systems can only store and move the data and information.

The paradox is that knowledge does not flow naturally within our complex organizations. Barriers come in all shapes and sizes, and KM cannot be left to happenstance if we are to stay competitive and continuously learn, innovate, and adapt. Knowledge leadership is required at the highest levels of an organization to resource, prioritize, and advocate for a deliberate KM

Knowledge superiority is the dominance in the flow of knowledge and expertise through personalization and codification sufficient to win the learning competition in counterinsurgency and persistent conflict.

approach. Knowledge leadership at the middle and bottom of the organization is also required to innovate, identify opportunities and threats to knowledge flow, and practice effective KM strategies to prevent the loss of organizational knowledge.

The knowledge environment must address the full spectrum of

knowledge—from explicit knowledge that we can write down and manage as a physical artifact, to the more elusive tacit knowledge (the knowledge in our heads), which many argue cannot be made explicit. However, through the proper techniques, it can be brought forward, made visible, and shared in some limited fashion. Without understanding the difference, we try to manage all knowledge as explicit, falsely believing it can be captured, stored, and shared through electronic means. Nothing could be further from the truth, and this accounts for the frustrations most organizations experience, given a heavy technology emphasis.

The elements of the knowledge environment that must be managed include the following:

People

Knowledge is social and only moves through people. Information systems can only store and move the data and information. When we speak of people, we refer to their ability to understand, learn, and apply the processes, technologies, principles, and strategies required in a self aware and adaptive Army. The knowledge, skills, and abilities of each Soldier must be deliberately developed. We don't send Soldiers into combat without proper marksmanship training, yet we send them into staff work and combat without training on how to use the knowledge tools and processes.

Process

KM processes help us convert knowledge to action and achieve results as we move to accomplish an organizational/unit objective. The results of these processes must be linked and contribute to accomplishing organizational objectives before the true value of KM can be realized. A variety of knowledge processes exist based on who you read. All have some degree of knowledge acquisition, organization, and dissemination. Most KM literature cites knowledge use as central to each KM process.

The current FM 6-01.1 lists four KM processes,

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but current thinking describes seven to nine processes used to plan, create, acquire, organize, integrate, maintain, transfer, assess, and effectively use and reuse what they know. These are not the organizational processes like the military decisionmaking process or troop leading or task management; these are processes specific to knowledge, and each one is used for any single given organizational process.

Using knowledge is not a process itself, but rather the reason we manage these processes – to effectively use and reuse what we know. These processes apply to individuals, organizations, and across the enterprise. Failure to understand the processes and address them directly is one of the major reasons stovepipes continue to appear and we, as an Army, have difficulty sharing across organizational boundaries. Technology will enable these processes, but in the end, the ability to share and use the knowledge is a human endeavor.

Technology

Technology enables KM. It is not KM itself. Technology allows us to reach further and span time and geography. It also allows us to store and move unthinkable amounts of information and data. Too often we have seen organizations that equate SharePoint to KM. Technology is essential for effective KM, as we can no longer rely on sharing with just a local group as we did in the past. We can manage the technologies and access to them either locally or across the enterprise.

One of the biggest frustrations today remains our inability to access our information from outside our local domain. Soldiers remain frustrated with technology since they have such world-wide access to information at home but constantly

seemed to be blocked at work. Training on current information technologies is one of the biggest shortcomings we see during our visits to units and organizations. Every organization we have visited has a deficiency in IT/KM technology training, primarily because some leaders continue to believe systems are intuitive or that training provided once is sufficient to sustain you for the next few years. However, the most successful organizations have continuous training on systems and processes available for all Soldiers and civilians, not just for “knowledge workers.” Technology in support of the knowledge environment must provide a suite of services and applications, for both synchronous and asynchronous interactions, and it must provide the security protocols required to protect information without severely restricting access to critical knowledge.

Structure

Structure refers to organizational structures such as: organizational layout or wire diagram; the policies, procedures, and processes; the physical structure of where people sit and who they interact with regularly; and the plans and strategies that guide daily operations. In one organization, we improved knowledge flow by more than 30 percent by simply changing the arrangements of people in the Operations Center. Much of the component ‘structure’ is about human-to-human interactions and removing the barriers that inhibit these interactions. Structure in this construct also includes doctrine, the knowledge repositories and databases used by the Army, the business practices employed both administratively and tactically, and the KM structures and infrastructure at each unit level.

Content

This component consists of both tacit and explicit knowledge. According to many recent studies, 80 percent of the knowledge we

KM Processes

- *Knowledge planning*
- *Knowledge creation*
- *Knowledge acquisition*
- *Knowledge integration*
- *Knowledge organization*
- *Knowledge transfer*
- *Maintaining knowledge*
- *Assessing knowledge*

use on the job is tacit. The majority of which cannot be made explicit, yet we continue to expend nearly all our resources on technology solutions that can only organize, store, and move 20 percent of what we know. We have disregarded the other elements of the knowledge environment and continue to fail to understand that knowledge flow requires movement of both types of knowledge to show value.

While our IT systems are great at storing and moving data, information at rest in these systems is virtually useless. The more we share and adapt it, the more valuable it becomes. Making tacit knowledge flow requires person-to-person interactions, communities of practice, Army professional forums, and collaborative sessions. All of these practices are excellent methods that apply technology to assist content flow.

On the other hand, no technology is required to perform an effective after action review or hold a peer assist.

Culture

This is about creating an obligation for continuous learning and sharing. ‘Knowledge is power’ is an outdated axiom and can often cost lives. The new mantra for an organization must be ‘The power of knowledge shared’ to create a culture

of collaboration, where we can routinely build and create knowledge jointly. To effect change, we have to focus on specific behaviors, and without understanding this component of the knowledge environment, most change initiatives never live past the leader's departure. Culture change can and must be deliberately and delicately managed. It lies in all three of the people, processes, and technology components, but must be clearly identified and targeted if change is to last.

Knowledge Leadership

This component affects the other components and is often the single point of failure in a unit's ability to collaborate and share effectively. When the boss doesn't get it, it is unlikely collaboration will be a priority. Effective knowledge leadership will:

- o Make KM a top priority and put it on the agenda
- o Establish and communicate a knowledge vision, allowing the organization to:
- o Manage conversation
- o Enable knowledge activists
- o Manage change processes
- o Globalize knowledge
- o Develop knowledge leaders in the organization
- o Build a guiding team
- o Create an obligation to share
- o Enable action: put tools in place
- o Create momentum and sustain it

If all other components are perfectly balanced but no effective knowledge leadership exists, the frustration and lack of resources will quickly grind any KM initiative to a halt. Knowledge leadership does not have to come from the top. In many cases, we have seen it from the middle or a grassroots level. These efforts are often slower and fail more often as they are crushed by the bureaucracy. More often than not, the obstacles to effective collaboration also come from the middle levels of our organizations. They are the dead-end senior field grades and civilians who don't understand

systems, the speed or complexity of knowledge flow, and are too busy to get organized. They are usually approaching the end of their careers and have given up on learning anything new. They are the ones who former Army Chief of Staff GEN Eric Shinseki, was talking to when he said "if you don't like change, you're going to hate being irrelevant." Strong knowledge leadership is required to make us a net-centric, learning organization and ensure we can win the learning competition.

Conclusion

Managing the knowledge environment should not be left to chance. We don't build schools and expect learning to occur without having teachers. We don't build libraries and expect the patrons to understand the filing system, manage the stacks, or know where each type of book might be located. For these reasons, we need dedicated KM professionals in every organization to assist the leadership in developing plans and policies that govern the unit's human capital, integrating and training unit personnel, managing tools and content that facilitate the human-to-human and human-to-system interactions, and program the system-to-system interactions.

KM and the associated tools and technologies that support and enable it are increasing in complexity. Building understanding and acceptance of the KM policies, tools, and procedures must happen early in a Soldier's introduction to the organization and recur often to remain current. As tools and processes change quickly, the organization needs a strategy for acculturating new members and developing legacy workers through continuous education and learning. This learning must be built, coordinated, managed, and quality controlled by the KM team in careful coordination with the schools and departments. It must be part of a continuous learning philosophy and assist in creating a culture of collaboration and lifelong learning.

**Technology is an enabler,
not a replacement for an
effective KM strategy.**

The knowledge environment is a framework that we can manage. It offers a practical approach to a discipline saddled by heavy baggage and misunderstanding. We must create a culture of collaboration and knowledge sharing in the Army where key information is not only 'pushed and pulled,' but where organizational prodding (think Amazon.com when it sends you an e-mail saying people who liked X book will like Y book) helps connect the Soldier to the global knowledge they need now to meet mission objectives. We must help knowledge flow across the knowledge environment so that good ideas are shared immediately and are valued regardless of the source. In this new Army culture, knowledge sharing is recognized and rewarded, and the knowledgebase is accessible without technological or structural barriers. In this new Army culture, we manage the knowledge environment; not just the knowledge.

LTC (R) Michael Prevou, Ph.D., is an Army veteran with operational tours in Afghanistan, Macedonia, and Bosnia. He has served at various command and staff positions throughout his career and as an observer controller (combat training coach) at the National Training Center and Battle Command Training Program. He has been involved in KM with the Army for over nine years.

ACRONYM QuickScan

FM - Field Manual
IT - Information Technology
KM - Knowledge Management
MDMP - Military Decisionmaking Process